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TRANSMITTAL FORM

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First Named Inventor	Richard Meyer, et al.
Art Unit	2155
Examiner Name	Nawaz, Asad M.
Attorney Docket Number	00121-000600000

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
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- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on February 20, 2008. This Appeal Brief has been modified as requested to seperately refer to all independent claims namely 1, 13, 15 and 27.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Wiesner and Associates		
Signature	/Leland Wiesner/ Leland Wiesner		
Printed name	Leland Wiesner		
Date	12/8/2008	Reg. No.	39424

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First Named Inventor	Richard Meyer, et al.
Serial No.	10/695,887
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Group Art Unit	2155
Examiner Name	Nawaz, Asad M.
Confirmation No.	7792
Docket No.	00121-000600000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Meyer et al.

Title: METHOD AND SYSTEM FOR DYNAMIC EXPANSION AND CONTRACTION OF NODES IN A STORAGE AREA NETWORK

VIA EFS

APPEAL BRIEF

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As required under 37 C.F.R. § 41.37(a), this Appeal Brief is being submitted in furtherance of the Notice of Appeal filed on August 20, 2008. The fees required under 37 C.F.R. § 41.20(b)(2) are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF. This Appeal Brief contains items under the following headings:

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The present application has been assigned in an assignment recorded at Reel 015963, Frame 0680 to Network Appliance, Inc., now NetApp, Inc., a Corporation established under the laws of the State of Delaware and having a principal place of business at 495 East Java Drive, Sunnyvale, CA 94089, U.S.A..

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any other related appeals or interferences that may directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

III. STATUS OF THE CLAIMS

Claim 1-28 are rejected under 35 U.S.C. § 102(e) over U.S. Patent Publication No. 2002/0007445 to *Blumenau* (hereinafter "Blumenau").

Appellant appeals the rejection of all of the pending claims 1-28 which are set forth in the attached Appendix A.

IV. STATUS OF AMENDMENTS

The amendments to the claims have all been entered and Appellant is unaware of any amendments filed after the Final Office Action mailed 05/13/2008 which finally rejected Claims 1-28.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following listing provides a reference between each independent claim and some, but not necessarily all, paragraphs and figures in the specification:

Independent Claims 1, 13, 15 and 27 (Appellant's Specification, Figure 3b, Figure 4 , Figure. 5, paragraphs [0038]-[0049])

As a preface, it is useful to present the language and terminology of Storage Area Networks (SAN). SANs generally allows computer servers and other devices called "host servers" or "hosts" to connect to "storage devices" over a network. Host controller cards installed in the host allow the host to connect to other peripheral devices over a storage protocol like iSCSI. In a SAN, the host controller in the host may be directly connected to the host side of a storage controller or indirectly connected through the network. (Appellant's specification FIG. 1, paragraphs [0026]-[0028]) In contrast to the host controller, the storage controller is an intelligent controller that connects to one or more storage devices and virtualizes the storage. (Appellant's specification FIG. 1 paragraph [0029]) As indicated in the claims below, aspects of the present invention creates a logical storage controller that virtualizes the storage controller device itself.

Claims 1-28 are directed to a dynamic method and system for expanding and contracting nodes on a storage controller in a storage area networks. A single storage pool can be managed with multiple storage controllers configured and managed in accordance with the present invention as a single logical storage controller. Ports can be added without increasing the number of storage islands being managed as ports are added in contiguous sequence with preexisting ports in the logical storage controller. Multiple new storage controllers entered into a logical storage controller contribute additional ports to the SAN while appearing as a single and larger storage controller. (Appellant's specification paragraph [0022])

Implementations of the present invention facilitate combining multiple storage controllers into a single larger logical storage controller. It can also be used to combine existing and older storage controllers with newer storage controllers. The logical storage

controller construct implemented in accordance with the present invention accommodates different storage controllers through an application programming interface (API). This API is used to exchange database information between the various storage controllers pertinent to operation of the overall logical storage controller. The API even makes it possible for storage controllers using different databases to share important SAN configuration information and coexist. This API interface also enables customers to upgrade from an older model storage controller to a newer storage controller without having to remove the existing older storage controller model from the SAN. (Appellant's specification paragraph [0023])

Further, the present invention provides an increased reliability characteristic given hardware or software failures. In a logical storage controller containing *n* physical storage controllers the impact of failure from a storage controller can be reduced to approximately *1/n*. The larger logical storage controllers have significant improved performance and reliability due to the increased redundancies in ports and communication paths not previously available using conventional solutions. (Appellant's specification, paragraph [0024])

Representative Claim 1 describes a method for adding a storage controller node in a storage area network. To start, the method receives a storage controller node to add to a logical storage controller in the storage area network. The logical storage controller represents the existing one or more storage controllers that have already been configured into the storage area network. For example, the logical storage controller may include a first storage controller having 8 ports identified as port 1 through port 8 and a predetermined node name of "10000000FFE00048" assigned to the first storage controller during manufacture (Appellant's Specification, Figure 3b, Figure 4 , paragraphs [0040], [0041], [0042]). An additional second storage controller to be added to the logical storage controller in this example also may have 8 ports but is assigned a predetermined nodename of "100000007BB00002" that differs from the nodename of the first storage controller (Appellant's Specification, Figure 3b, Figure 4 , Figure. 5, paragraphs [0040], [0041], [0042])..

Next, the method adopts the logical nodename from the logical storage controller in place of the predetermined nodename associated with the storage controller. (Appellant's Specification, Figure 3b, Figure 4 , Figure. 5, paragraphs [0040], [0041], [0042]). In the above example, the method adopts the logical nodename of "10000000FFE00048" for the second storage controller because it is the logical nodename assigned to the logical storage controller arrangement.

Further, the method in Claim 1 renumbers a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller (Appellant's Specification, Figure 3b, Figure 4, Figure. 5, paragraphs [0040], [0041], [0042]). In this example, the method renumbers ports 1 through 8 in the second storage controller to 9 through 16 giving the logical storage controller a contiguous sequence of ports ranging from 1 to 16.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

WHETHER CLAIMS 1 TO 28 ARE ANTICIPATED UNDER 35 U.S.C. § 102(E) BY U.S. PATENT PUBLICATION NO. 2002/0007445 TO BLUMENAU.

VII. ARGUMENT

Appellant respectfully traverses the outstanding rejections of the pending claims, and requests that the Board overturn the outstanding rejections in light of the remarks contained herein. The claims do not stand or fall together. In fact, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is presented with separate headings and sub-headings, as required by 37 C.F.R. § 41.37(c)(1)(vii).

a. BLUMENAU CANNOT ANTICIPATE A STORAGE CONTROLLER RECITED IN CLAIM 1 AS BLUMENAU REFERENCES A HOST CONTROLLER AND THE HOST CONTROLLER IS NOT THE SAME AS THE STORAGE CONTROLLER RECITED IN CLAIM 1

In general, the Final Office Action cites Blumenau for the various operations it performs in conjunction with a host controller. (Page 2, item 3 of Final Office Action dated May 3, 2008 referencing paragraphs 0007, 0121 and 0081 of Blumenau). [1] In

1 The Final Office Action made either numerous typographical errors or inappropriately used the term "storage controller node" in the respective arguments. Specifically, the reference cited in the Final Office Action describes certain operations involving a "host controller" and not a "storage controller" as asserted. For example, paragraph 0081, lines 13-17 of Blumenau states, "At any given time, the S_ID and host controller port WWN also provide unique identification numbers for the volume group, but the S_ID is changed upon booting of the host controller, and the WWN is changed upon [host] controller replacement." It is hard to not recognize that Blumenau is

contrast, Claim 1 recites operations performed in conjunction with "a storage controller node". Because a host controller is not the same as a storage controller it is not possible for the cited reference to anticipate Claim 1. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 U.S.P.Q.2D (BNA) 1051, 1053 (Fed. Cir. 1987) (explaining that a prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim). See Kloster Speedsteel AB v. Crucible, Inc., 793 F.2d 1565, 1571, 230 U.S.P.Q. (BNA) 81, 84 (Fed. Cir. 1986) ("Absence from the reference of any claimed element negates anticipation.")

Those skilled in the art of storage systems and even the Blumenau reference cited in the Final Office Action support this point of view. First, the Appellant respectfully submits that the host controller and storage controller cannot be considered the same or even equivalent as they are well-known terms describing two different types of devices. Those skilled in the art know that host controllers are cards installed in the hosts that allow the host to connect to other peripheral devices over a storage protocol like iSCSI. For example, in a SAN the host controller in the host may be connected to a storage controller over the network or may be directly connected to the host side of a storage controller. (Appellant's specification FIG. 1, paragraphs [0026]-[0028]) In contrast to the host controller, the storage controller is an intelligent controller that connects to one or more storage devices and virtualizes the storage. (Appellant's specification FIG. 1 paragraph [0029])

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referencing a host controller and not a storage controller as asserted by the Final Office Action.

Even the Blumenau reference cited in the Final Office Action insists that the host controller and storage controllers are different components within the SAN and should not be confused with each other. Blumenau delineates these two components stating, "The term 'host controller' will be used instead to avoid confusion with the 'port adapter' of the storage controller or storage subsystem." (paragraph 0077 of Blumenau)

Consequentially, operations involving the host controller described in Blumenau should apply specifically to the host controller. There is nothing in Blumenau that would lead one skilled in the art to apply the same to a storage controller.

For at least this reason, Appellant respectfully requests that the Board overturn the 35 U.S.C. § 102(e) rejection of record with respect to Claim 1.

b. BLUMENAU DOES NOT TEACH RECEIVING A STORAGE CONTROLLER NODE TO ADD TO A LOGICAL STORAGE CONTROLLER IN THE STORAGE AREA NETWORK AS RECITED IN CLAIM 1

In view of Blumenau and our remarks below, Blumenau does not teach, suggest or describe the individual limitations found in Claim 1. Accordingly, the Final Office Action has not established a prima facie of anticipation because every element of independent Claim 1 is not taught by the cited reference. See Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2D (BNA) 1913, 1920 (Fed. Cir.), cert. denied, 493 U.S. 853, 107 L. Ed. 2d 112, 110 S. Ct. 154 (1989) (explaining that an invention is anticipated if every element of the claimed invention, including all claim limitations, is shown in a single prior art reference). See Jamesbury Corp. v. Litton Industrial Products, Inc., 756 F.2d 1556, 1560, 225 USPQ 253, 256 (Fed. Cir. 1985) (explaining that the

identical invention must be shown in as complete detail as is contained in the patent claim).

First, Blumenau does not teach, "receiving a storage controller node to add to a logical storage controller in the storage area network having a logical node name and a sequence of logical ports" as recited in Claim 1. Final Office Action dated May 13, 2008 alleges that paragraphs 0007 and 0121 of Blumenau teach this aspect of Claim 1 but provides no explanation or details how this is possible. Nonetheless, the Appellant has diligently reviewed these and other sections but cannot find support for the Final Office Action's assertion. Thus, the Appellant respectfully submits that the Office Action dated May 13, 2008 misconstrued paragraphs 0007 and 0121 of Blumenau as they do not teach all the limitations of Claim 1.

With respect to paragraph 0007, Blumenau describes a method of limiting a host's access to certain logical volumes of a storage system by limiting the host to only connect to certain ports of the storage system. (paragraph 0007, lines 1-5 of Blumenau) This portion of Blumenau does not teach, suggest or describe "receiving a storage controller node to add a logical storage controller in the storage area network having a logical nodename" as recited in Claim 1. For example, limiting access to only certain ports of the storage system in Blumenau does not relate to taking "a storage controller node to add to a logical storage controller" as recited in Claim 1.

Appellant respectfully requests that the board overturn the rejection of Claim 1 since the limitations in Claim 1 cannot be found in this paragraph as asserted in the Final Office Action.

Blumenau also describes "establishing a link between any of the hosts and any of the port adapters" in paragraph 0007, lines 12-18 but this also does not teach, suggest or describe "receiving a storage controller node to add a logical storage controller in the storage area network having a logical nodename" as recited in Claim 1. Establishing a link between any of the hosts and any of the port adapters as described in Blumenau does not relate to "receiving a storage controller node to add a logical storage controller in the storage area network having a logical nodename." At a minimum, Blumenau does not even teach, suggest or describe the limitation of "a logical storage controller" as recited in Claim 1 therefore it must also follow that Blumenau cannot teach "receiving a storage controller node to add to a logical storage controller....having a logical nodename" as asserted in the Final Office Action.

Appellant respectfully requests that the board overturn the rejection of Claim 1 since these additional limitations in Claim 1 cannot be found in this paragraph as asserted in the Final Office Action.

With respect to paragraph 0121, Blumenau's adding "virtual ports" does not teach or even suggest "receiving a storage controller node to add to a logical storage controller in the storage area network having a logical nodename and a sequence of logical ports" as recited in Claim 1. The virtual ports of Blumenau provide access control such that "the set of logical volumes mapped to different virtual ports can be the same or different." (paragraph 00121, lines 13-14 of Blumenau) These virtual ports used in Blumenau do not add physical ports but instead facilitate access control between certain hosts and various logical storage volumes. As stated in Blumenau, "two virtual ports can be the

same to permit two hosts to share the set of logical storage volumes mapped to the two virtual ports." (paragraph 0121, lines 16-18 of Blumenau)

Indeed, virtual ports in Blumenau do not increase the number of actual physical ports and do not operate by "receiving a storage controller node to add to a logical storage controller in the storage area network" as recited in Claim 1. It must be recognized that "virtual ports" in Blumenau are the not the same as the "logical ports" recited in Claim 1. Logical ports in Claim 1 are renumbered ports associated with an added storage controller and therefore correspond to an actual increase in the physical ports depending on the number of ports in the added storage controller. In contrast, Blumenau specifies virtual ports that are merely new identifiers used to access existing physical ports with different access levels. For example, the virtual ports in Blumenau are used for "volume configuration and site management." (paragraph 0151 of Blumenau) Virtual ports therefore merely provide different ways of accessing the same number of physical ports available on the storage system; they do not serve to increase the actual number of ports available. (*Id.*)

Moreover, Blumenau teaches away from adding storage controllers to a logical storage controller node as recited in Claim 1. (paragraph 0151 of Blumenau) For example, Blumenau overbooks or adds 4 virtual ports to each of the existing 16-physical ports on a single storage controller instead of adding physical ports. (*Id.*) The virtual ports in Blumenau teach away from adding "logical ports" as recited in Claim 1 at least because no underlying physical ports are added. In any case, Blumenau simply fails to teach, suggest or describe the limitations in Claim 1 that recite "receiving a storage

controller node to add to a logical storage controller" resulting in additional logical ports and physical ports of the storage controller node.

Appellant respectfully requests that the board overturn the rejection of Claim 1 since these additional limitations in Claim 1 cannot be found in the cited reference as asserted in the Final Office Action.

c. BLUMENAU DOES NOT TEACH, DESCRIBE OR SUGGEST ADOPTING THE LOGICAL NODENAME FROM THE LOGICAL STORAGE CONTROLLER IN PLACE OF THE PREDETERMINED NODENAME ASSOCIATED WITH THE STORAGE CONTROLLER AS RECITED IN CLAIM 1.

Further, Blumenau does not teach, suggest or describe "adopting the logical nodename from the logical storage controller in place of the predetermined nodename associated with the storage controller" as also recited in Claim 1. There is no support for the Final Office Action's allegation that paragraphs 0081-0083 and 0103 of Blumenau teach this aspect of Claim 1.

The Appellant respectfully submits that the Final Office Action appears to have also misconstrued paragraphs 0081-0083 and 0103 of Blumenau.

With respect to Paragraphs 0081-0083, Blumenau does not even teach, suggest or describe a "logical storage controller" and a corresponding "logical nodename" as recited in Claim 1. Appellant has diligently read paragraphs 0081-0083 and elsewhere in Blumenau but these limitations cannot be found. Indeed, paragraph 0081 of Blumenau has a volume access table that records WWNs from different host controllers but this has nothing to do with even a "storage controller" or a "logical storage controller" as recited in Claim 1. As previously described, it is important not to confuse "host controllers" with

"storage controllers" or simply interchange the terminology since they have distinctly different meaning and function to those skilled in the art. (paragraph 0077 of Blumenau)

With respect to Paragraph 0103, Blumenau also does not teach, suggest or describe "adopting the logical nodename from the logical storage controller in place of the predetermined nodename associated with the storage controller" as recited in Claim 1. On the contrary, paragraph 0103 of Blumenau actually teaches automatically storing the physical WWNs from a host controller in volume access table. The predetermined WWN from the physical host controller is always automatically stored in the volume access table. (paragraph 0081-0083 of Blumenau) Nothing in Blumenau adopts a WWN from one host controller in place of the predetermined WWN for another host controller.[2]

Likewise, the volume access table in Blumenau concerns WWNs associated with host controllers and not storage controllers. As previously described, host controllers are located on host devices trying to access storage while storage controllers are associated with storage devices and designed to control and manage request for storage on the storage devices. Blumenau as well as those skilled in the art would readily appreciate that these two different components (i.e., the host controller and the storage controller) have distinct functions and cannot be interchanged. (*Id.*)

Appellant respectfully requests that the board overturn the rejection of Claim 1 since these additional limitations in Claim 1 cannot be found in the cited reference as asserted in the Final Office Action.

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2 The Final Office Action dated May 13, 2008 page 6, lines 8-12 insists that "the WWN need not be the WWN of the physical device, instead another can be adopted by physically inputting it into the system (see 0081-0083,0103) yet there appears no support for this assertion. In fact, those skilled in the art reading these aforementioned paragraphs and elsewhere in Blumenau would actually have to conclude quite the opposite – that is the WWN in Blumenau cannot be adopted by physically inputting it the system since it is automatically culled from the host controller upon boot.

d. FINAL OFFICE ACTION DATED MAY 13, 2008 MISCONSTRUES PARAGRAPHS 0081-0082 AND 0103 OF BLUMENAU TO TEACH OR SUGGEST THAT "THE WWN NEED NOT BE THE WWN OF THE PHYSICAL DEVICE, INSTEAD ANOTHER CAN BE ADOPTED BY PHYSICALLY INPUTTING IT INTO THE SYSTEM".

Further, the Final Office Action dated May 13, 2008 (page 6, paragraph 2 of Final Office Action) misconstrues paragraphs 0081-0082 and 0103 of Blumenau to teach or suggest that "the WWN need not be the WWN of the physical device, instead another can be adopted by physically inputting it into the system." Indeed, Blumenau teaches that the system administrator defines the volume group names and the volumes in each volume list (paragraph 0082, lines 1-2 of Blumenau) and that the system administrator may also defined host names, host controller numbers and port adapter numbers. (paragraph 01030, lines 1-10) However, Blumenau does not expressly, implicitly or inherently teach that the system administrator may enter the WWN at all since this is done by the system automatically. For example, the WWN of a host controller would change if the host controller in a host is replaced with a new host controller having a different WWN. (paragraph 0082 and 0103 of Blumenau) On the contrary, Blumenau teaches that the WWN is *always* the WWN of the physical device and should not be changed. Blumenau explicitly states that the "the port adapter(s) automatically search the network for the S_ID and WWN of the host controller ports corresponding to the group names." (paragraph 0103, lines 14-17 of Blumenau)

Further, Blumenau describes that the "host controller is programmed with a unique WWN for circuitry in the host controller for each of the respective ports". (paragraph 0077 of Blumenau) When a host controller fails and is replaced with a new host controller, the new host controller has a different WWN and does not adopt or reuse the WWN of the original host controller that failed. (*Id.*) According to Blumenau, the new WWN of the replacement host controller eventually must get placed in the volume access tables. (paragraph 0082 of Blumenau) If a host controller in Blumenau fails and is replaced then the new WWN assigned at manufacture to the new host controller is registered with the access control scheme in Blumenau and the old WWN from the failed host controller is discarded. (paragraphs 0082, 00107 of Blumenau).

Nothing in Blumenau states "adopting the logical storage controller in place of the predetermined nodename associated with the storage controller" as recited in Claim 1 is even possible.

Appellant respectfully requests that the board overturn the rejection of Claim 1 since these additional limitations in Claim 1 cannot be found in the cited reference as asserted in the Final Office Action.

e. THE FINAL OFFICE ACTION DATED MAY 13, 2008 HAS MISCONSTRUED AND INAPPROPRIATELY BROADENED BLUMENAU TO APPLY TO THE "WWN OF THE PHYSICAL DEVICE" IN GENERAL.

Appellants also respectfully submit that the Final Office Action dated May 13, 2008 has misconstrued and inappropriately broadened the teachings of Blumenau as applying to the "WWN of the physical device" in general. (page 6, paragraph 2 of the Final Office Action) Nothing in Blumenau indicates that it generally applies to any or all physical devices having a WWN. On the contrary, Blumenau does not apply to a

"physical device" in general as asserted in the Final Office Action but instead is narrowly limited to a host controller and it's associated WWN. Accordingly, the portions of paragraphs 0081-0082 and 0103 from Blumenau concern host controller devices and volume access tables but not the "nodename associated with the storage controller" as recited in Claim 1.

Appellant respectfully requests that the board overturn the rejection of Claim 1 since these additional limitations in Claim 1 cannot be found in the cited reference as asserted in the Final Office Action.

f. BLUMENAU ALSO DOES NOT TEACH, SUGGEST OR DESCRIBE, RENUMBERING A SET OF PORTS ASSOCIATED WITH THE STORAGE CONTROLLER TO EXTEND THE SEQUENCE OF LOGICAL PORTS ASSOCIATED WITH THE LOGICAL STORAGE CONTROLLER AS RECITED IN CLAIM 1.

Finally, Blumenau also does not teach or suggest, "renumbering a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller" as recited in Claim 1. The Final Office Action dated May 13, 2008 alleges that paragraphs 0081 of Blumenau teaches this aspect of Claim 1. However, the Appellant respectfully submits that the Final Office Action has not only misconstrued the meaning of paragraph 0081 of Blumenau but also confused the terminology.

As previously described, Claim 1 of the instant Application concerns a "storage controller" and "logical storage controller" yet paragraph 0081 of Blumenau concerns a host controller. Blumenau has taken great efforts to clearly define its use of terminology to avoid exactly the error made in the Final Office Action. As previously noted, the

Blumenau reference makes it clear that operations involving the host controller described in Blumenau apply specifically to the host controller and not to a storage controller. Blumenau also recognizes that the host controller and storage controller are different components in a storage network having different functions and requirements. Indeed, Blumenau delineates these two components stating, "The term 'host controller' will be used instead to avoid confusion with the 'port adapter' of the storage controller or storage subsystem." (paragraph 0077 of Blumenau)

Moreover, nothing in paragraph 0081 or Blumenau in general even teaches or suggests "renumbering a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller." Paragraph 0081 only mentions the fact that the S_ID changes upon booting the host controller and the WWN changes when the host controller is replaced. These functions performed on the host are not the same or equivalent to functions performed on the storage controller. Further, even arbitrarily changing an S_ID and WWN would not achieve the goal of "renumbering a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller" as clearly recited in Claim 1 (Emphasis added). The description of Blumenau simply does not even mention "renumbering" or "extending the sequence of logical ports". Appellant respectfully submits that these limitations are not described explicitly, implicitly or inherently in Blumenau and the rejection in the Final Office Action in improper.

Accordingly, Appellants respectfully requests that the Board overturn the 35 U.S.C. § 102(e) rejection of record with respect to Claim 1 for this further reason.

For at least the reasons associated with Claim 1, it is also respectfully requested that the Board also overturn the rejection under 35 U.S.C. § 102(e) of independent claims 13, 15 and 27.

g. DEPENDENT CLAIMS 2-12, 14, 16-26 AND 28 AND ARE ALSO IN CONDITION FOR ALLOWANCE.

While claims 2-12, 14, 16-26 and 28 are allowable independently, they are also in condition for allowance by virtue of their dependence directly or indirectly from claims 1, 13, 15 and 27 respectively.

VIII. CONCLUSION

Appellants respectfully submit that they have demonstrated that the cited references do not teach or suggest each and every element of the pending claims 1-28 and that the rejections under 35 U.S.C. § 102(e) cannot be maintained.

[illegible]

None.

X. RELATED PROCEEDINGS APPENDIX

None.

Respectfully submitted,

Date: 10/16/2008

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CLAIMS APPENDIX A

What is claimed is:

1. A method for adding a storage controller node in a storage area network, comprising:

receiving a storage controller node to add to a logical storage controller in the storage area network having a logical nodename and a sequence of logical ports;

adopting the logical nodename from the logical storage controller in place of the predetermined nodename associated with the storage controller; and

renumbering a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller.

2. The method of claim 1 further comprising:

generating configuration information reflecting the additional storage controller added to the logical storage controller and the set of ports added to the corresponding sequence of logical ports; and

distributing the configuration information to one or more storage controllers associated with the logical storage controller.

3. The method of claim 1 wherein the logical nodename associated with the logical storage controller is derived from a predetermined nodename associated with one storage controller.

4. The method of claim 1 wherein the predetermined nodename from the first storage controller added to the logical storage controller is used for the logical nodename.

5. The method of claim 1 wherein the logical nodename is a unique world wide node name (WWN).

6. The method of claim 1 wherein the sequence of logical ports is a contiguous numeric sequence of ports generated as sets of ports from each storage controller are added to the

logical storage controller.

7. The method of claim 1 wherein each storage controller in the logical storage controller communicates with each other over an external communication link.

8. The method of claim 1 wherein each storage controller added to the logical storage controller is designated a role selected from a set of roles including: a primary storage controller, a secondary storage controller and a alternate storage controller.

9. The method of claim 8 wherein the secondary storage controller performs tasks assigned to the primary storage controller when the primary storage controller experiences a failure.

10. The method of claim 2 wherein the configuration information generated includes metadata describing the geometry of one or more volumes of data managed by the logical storage controller.

11. The method of claim 10 wherein the metadata information is selected from a set including: number of physical devices, physical device identifiers, ranges of blocks on the physical devices and total number of blocks.

12. The method of claim 2 wherein distributing the configuration information is performed using an application programming interface compatible with one or more databases.

13. A method of removing a storage controller node in a storage area network, comprising:

removing a storage controller node from a logical storage controller in the storage area network having a logical nodename and a sequence of logical ports;

deleting the set of ports associated with the storage controller removed from the sequence of logical ports associated with the logical storage controller; and

renumbering the sequence of logical ports to accommodate the deleted set of

ports.

14. The method of claim 1 further comprising:

generating configuration information reflecting the deleted storage controller removed from the logical storage controller and the set of ports removed from the corresponding sequence of logical ports; and

distributing the configuration information to one or more storage controllers associated with the logical storage controller.

15. An apparatus for adding a storage controller node in a storage area network, comprising:

a processor capable of executing instructions;

a memory containing instructions when executed on the processor receive a storage controller node to add to a logical storage controller having a logical nodename and a sequence of logical ports in the storage area network, adopt the logical nodename from the logical storage controller in place of the predetermined nodename associated with the storage controller and renumber a set of ports associated with the storage controller to extend the sequence of logical ports associated with the logical storage controller.

16. The apparatus of claim 15 further comprising instructions that generate configuration information reflecting the additional storage controller added to the logical storage controller and the set of ports added to the corresponding sequence of logical ports and distribute the configuration information to one or more storage controllers associated with the logical storage controller.

17. The apparatus of claim 15 wherein the instructions derive the logical nodename associated with the logical storage controller from a predetermined nodename associated with one storage controller.

18. The apparatus of claim 15 wherein the instructions use the predetermined nodename from the first storage controller added to logical storage controller for the logical

nodename

19. The apparatus of claim 15 wherein the logical nodename is a unique world wide node name (WWN).

20. The apparatus of claim 15 wherein the sequence of logical ports is a contiguous numeric sequence of ports generated as sets of ports from each storage controller are added to the logical storage controller.

21. The apparatus of claim 15 wherein instructions in each storage controller in the logical storage controller communicate with each other over an external communication link.

22. The apparatus of claim 15 wherein instructions designate a role to each storage controller added to the logical storage controller selected from a set of roles including: a primary storage controller, a secondary storage controller and an alternate storage controller.

23. The apparatus of claim 22 wherein the secondary storage controller performs tasks assigned to the primary storage controller when the primary storage controller experiences a failure.

24. The apparatus of claim 16 wherein the instructions that generate the configuration information includes metadata describing the geometry of one or more volumes of data managed by the logical storage controller.

25. The apparatus of claim 16 wherein instructions selected the metadata information from a set including: number of physical devices, physical device identifiers, ranges of blocks on the physical devices and total number of blocks.

26. The apparatus of claim 16 wherein instructions perform distribution of the configuration information using an application programming interface compatible with one or more databases.

27. An apparatus for removing a storage controller node in a storage area network, comprising:

a processor capable of executing instructions;

a memory containing instructions when executed on the processor remove a storage controller node from a logical storage controller in the storage area network having a logical nodename and a sequence of logical ports, delete the set of ports

associated with the storage controller removed from the sequence of logical ports associated with the logical storage controller ands renumber the sequence of logical ports to accommodate the deleted set of ports.

28. The apparatus of claim 27 further comprising instructions that generate configuration information reflecting the deleted storage controller removed from the logical storage controller and the set of ports removed from the corresponding sequence of logical ports and distribute the configuration information to one or more storage controllers associated with the logical storage controller.